

WHAT IS CLAIMED IS:

1. A method for manufacturing a semiconductor device equipped with a capacitor in which a dielectric film is used, wherein a complex oxide is used as a mask material when the dielectric film is etched.

2. The method according to claim 1, wherein the complex oxide contains SrRuO_3 as a main component.

3. The method according to claim 1, wherein the complex oxide is a conductive oxide, and the mask material is used as an electrode of the capacitor or part of the electrode after the etching.

4. The method according to claim 1, wherein a laminated structure of a conductive oxide and another conductive film or an insulation film is used as the mask material.

5. The method according to claim 1, wherein the dielectric film contains PZT as a main component.

6. The method according to claim 1, wherein Pt, Ir, Ru, IrO_2 , RuO_2 , or a laminated structure or a mixture of them is used as a material of an electrode of the capacitor.

7. A semiconductor device equipped with a capacitor in which a dielectric film is used, wherein a mask material used in etching the dielectric film is prepared as an electrode of the capacitor.

8. The semiconductor device according to claim 7, wherein the dielectric film is a ferroelectric film.

9. The device according to claim 8, wherein the ferroelectric film is PZT.

10. The device according to claim 7, wherein Pt, Ir, Ru, IrO₂, RuO₂, or a laminated structure or a mixture of them is used as a material of the electrode of the capacitor.

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